

A. In the Claims:

Please cancel claims 16-21 without prejudice.

Please add the following claims:

22. A V_H and V_L polypeptide having in combination with one another a catalytic activity isolated by the method comprising the steps of:

(a) synthesizing a V_H and a V_L -coding gene library containing a plurality of different V_H and V_L -coding DNA sequences by a method comprising the steps of:

- C
- (i) preparing a first polynucleotide containing composition, wherein at least a portion of the polynucleotides in said composition comprise a plurality of different V_H -coding sequences;
 - (ii) preparing a second polynucleotide containing composition, wherein at least a portion of the polynucleotides in said composition comprise a plurality of different V_L -coding sequences;
 - (iii) amplifying a plurality of V_H and V_L -coding sequences in said respective polynucleotide containing compositions;
 - (iv) joining in operable combination, V_H and V_L -coding sequences from said V_H and V_L -coding gene library with expression vectors so as to be able to express a V_H and V_L -coding sequence from each vector, whereby a diverse library is formed;

- (b) selecting and isolating from said diverse library at least one expression vector capable of producing V_H and V_L polypeptide having in combination with one another catalytic activity;
- (c) transforming a host cell with said expression vector; and
- (d) isolating a V_H and V_L polypeptide encoded by said vector from said host cell.

23. The V_H and V_L polypeptide of claim 22 wherein said V_H and V_L coding sequences from said V_H and V_L coding library are joined with separate expression vectors.

24. A V_H and V_L polypeptide having in combination with one another a catalytic activity isolated by a method comprising the steps of:

- C
- (a) preparing a first polynucleotide containing composition, wherein a portion of the polynucleotides in said composition comprise a plurality of different V_H -coding sequences;
 - (b) preparing a second polynucleotide containing composition, wherein a portion of the polynucleotides in said composition comprise a plurality of different V_L -coding sequences;
 - (c) amplifying a plurality of V_H and V_L -coding sequences from said first and said second polynucleotide containing compositions, respectively, by a method of amplification comprising the step of adding primers capable of hybridizing upstream and downstream from a plurality of said V_H coding sequences and adding primers capable of hybridizing upstream and downstream from a plurality of said V_L coding sequences, under conditions permitting hybridization to occur, whereby a plurality of different amplified V_H and a plurality of different amplified V_L coding sequences are produced;
 - (d) joining in operable combination, said amplified V_H and V_L -coding sequences with expression vectors so as to be able to express a V_H and V_L -coding sequence from each vector, whereby a diverse library is formed;
 - (e) selecting and isolating from said diverse library at least one expression vector capable of producing a V_H and V_L polypeptide which in combination with one another have said catalytic activity,
 - (f) transforming a host cell with said expression vector; and
 - (g) isolating a V_H and V_L polypeptide encoded by said vector from said host cell.

25. The V_H and V_L polypeptide of claim 24 wherein said amplified V_H and said amplified V_L coding sequences are joined with separate expression vectors.

26. A V_H and V_L polypeptide having in combination with one another a catalytic activity isolated by the method comprising the steps of:

- (a) producing a V_H and V_L -coding genetic library, by a method comprising the steps of:

- C
- (i) adding a first primer, wherein said first primer is capable of hybridizing to a first conserved nucleotide sequence substantially adjacent to a plurality of V_H-coding regions, and said coding sequences are present in a polynucleotide containing composition that comprises a plurality of different V_H and V_L coding sequences;
 - (ii) adding a second primer to said nucleotide containing composition, wherein said second primer is capable of hybridizing to a second conserved nucleotide sequence substantially adjacent to a plurality of different V_H-coding regions;
 - (iii) adding a third primer, wherein said third primer is capable of hybridizing to a third conserved nucleotide sequence substantially adjacent to a plurality of V_L-coding regions;
 - (iv) adding a fourth primer to said polynucleotide containing composition, wherein said fourth primer is capable of hybridizing to a fourth conserved nucleotide sequence substantially adjacent to a plurality V_L-coding regions;
 - (v) amplifying said V_H coding sequences and said V_L coding sequences;
 - (b) joining in operable combination said amplified V_H and V_L-coding sequences with expression vectors so as to be able to express V_H and V_L-coding sequence from said vectors, whereby a diverse library is formed;
 - (c) selecting and isolating from said diverse library expression vector capable of producing V_H or V_L polypeptides which in combination have said catalytic activity;
 - (d) transforming a host cell with said expression vectors; and
 - (e) isolating a V_H and V_L polypeptide encoded by said vector from said host cell.

27. The V_H and V_L polypeptide of claim 26 wherein said amplified V_H and V_L coding sequences are joined into separate expression vectors.

28. The V_H and V_L polypeptides of any of claims 22-27 wherein said V_H and V_L polypeptides comprise an Fab.